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Ans. 9857/1956 den 31/10 1956

Härtill en ritning

L W G MALMBERG, STOCKSUND

## Ishockeyklubba

Föreliggande uppfinning riktar sig på en ishockeyklubba och liknande bestående av ett skaft, som i sin nedre ände övergår i ett blad eller dylikt, varvid skaftet invid övergången till bladet är relativt klen dimensionerat för att medgiva en viss fjädring hos detsamma vid klubbans användning. Nämd.: klena dimensionering av skaftet medför den nackdelen, att klubbskäften ofta gå av. Genom föreliggande uppfinning elimineras den angivna nackdelen och ishockeyklubban kännetecknas enligt densamma därav, att den relativt klen dimensionerade delen av skaftet är försedd med en förstärkningsanordning, vilken är anordnad att styva upp skaftet, när nämnda del av skaftet bibringats en mindre för fjädringen avsedd böjning.

Enligt en föredragen utföringsform av uppfinningen består förstärkningsanordningen av amidplast eller dylikt material, varigenom även förstärkningsanordningen i vissa fall medverkar till skaftets fjädring vid klubbans användning. Klubbskaftets fjädring elimineras icke genom uppfinningen utan den gör det till och med möjligt att giva skaftet en ökad fjädring inom detta område, inom vilket förstärkningsanordningen icke träder i funktion. I trängda situationer kunna spelarna sålunda numera prestera bättre skott än tidigare.

Uppfinningen kommer att närmare beskrivas i anslutning till bifogade ritning, som visar en som exempel vald utföringsform av en ishockeyklubba enligt densamma. Fig. 1 visar klubban från sidan och fig. 2 visar densamma sedd bakifrån. Fig. 3 visar i annan skala en skärning längs linjen III—III i fig. 1.

Ishockeyklubban består av skaftet 1 och det vid skaftets nedre ände anordnade bladet 2. Såsom framgår av fig 2 har skaftet 1 en mot sin nedre ände avtagande bredd. Skaftet 1 erhåller sålunda en relativt klen dimensionering invid övergången till bladet 2 och detta även om bredden avtar konstant såsom vid vanliga ishockeyklubbor. Skaftets 1 nämnda klen dimensionerade del har betecknats med 3.

Enligt uppfinningen är den klen dimensionerade delen 3, som är avsedd att medgiva en

viss fjädring hos skaftet 1 vid klubbans användning, försedd med en förstärkningsanordning 4, vilken är anordnad att styva upp skaftet 1, när delen 3 bibringats en mindre för fjädringen avsedd böjning. Inom vissa gränser bibehåller alltså skaftet 1 sin fulla fjädringsförmåga.

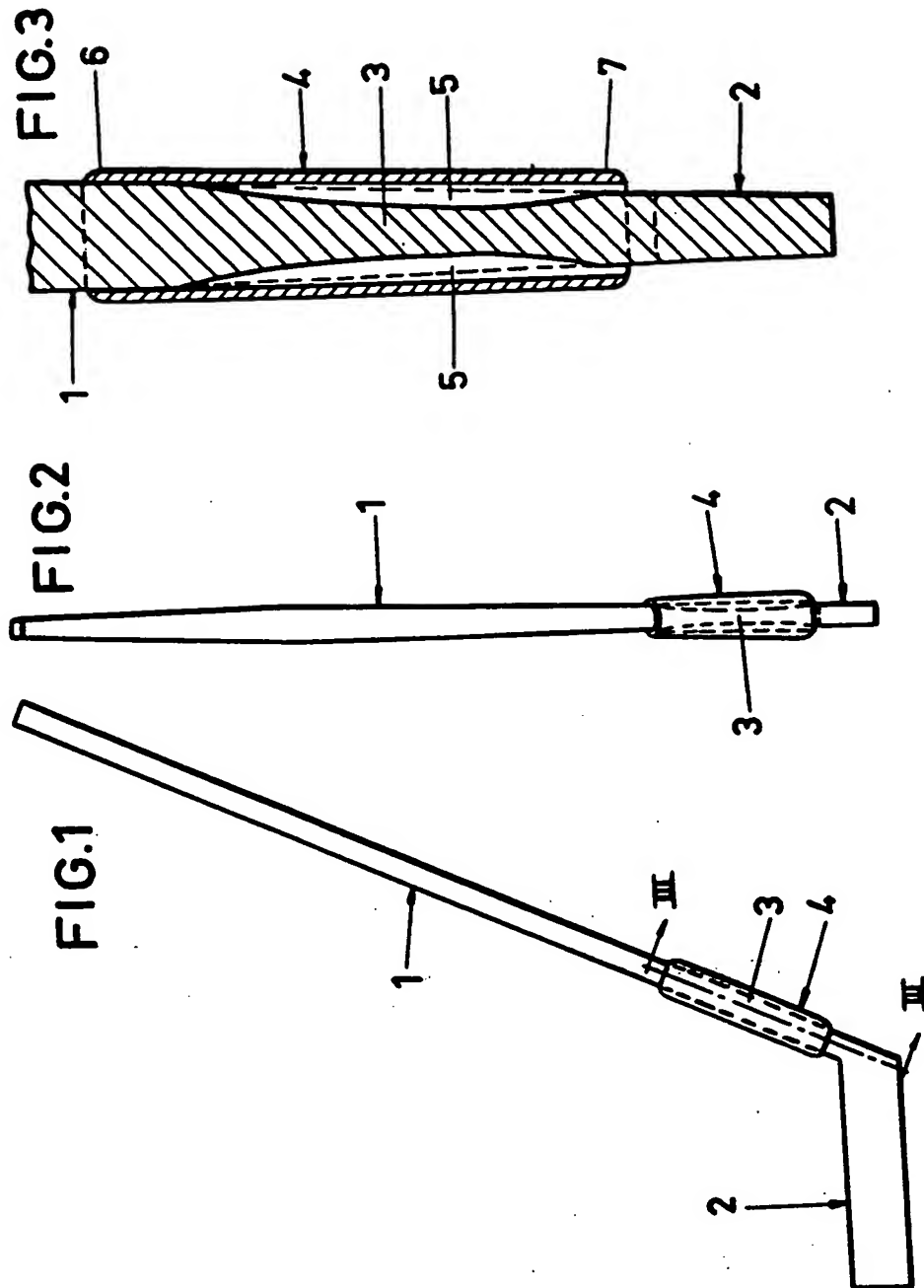
Förstärkningsanordningen 4 bör lämpligen bestå av amidplast eller dylikt material, så att även förstärkningsanordningen 4 kan medverka till skaftets 1 fjädring vid klubbans användning.

Såsom bäst framgår av fig. 3 har uppfinningen gjort det möjligt att göra delen 3 svagare än vad som tidigare varit fallet, varigenom fjädringen inom det område, inom vilket förstärkningsanordningen 4 icke träder i funktion, kunnat ökas. Försvagningen av delen 3 har åstadkommits genom konkava urtagningar 5 i densamma.

Såsom framgår av beskrivningen ovan medger klubban enligt uppfinningen två typer av fjädringar, varvid den ena helt bestäms av partiet 3 och den andra av partiet 3 i kombination med förstärkningsanordningen 4. Den förra användes i trängda lägen, där mindre kraft kan läggas ned i slaget, och den senare för övrigt när verkligt hårda skott önskas.

Enligt den på ritningen visade föredragna utföringsformen utgöres förstärkningsanordningen 4 av en på skaftet 1 över den relativt klen dimensionerade delen 3 anordnad hylsa eller dylikt, vilken vid sin ena ände 6 är i fast ingrepp med skaftet 1 och vilken vid sin andra ände 7 är belägen på avstånd från skaftet 1. Hylsan 4 är anordnad att trädas på skaftet 1 innan bladet 2 limmas eller på annat sätt fästes vid skaftet 1.

Hylsan 4 bör lämpligen vara så formad att den kommer till fast ingrepp med skaftet 1 med sin övre ände 6, medan dess nedre ände 7 är belägen på avstånd från skaftet 1. Hylsan 4 kan härvid ha ett konstant tvärsnitt såsom enligt fig. 3. Avståndet mellan hylsändan 7 och skaftet 1 bestäms emellertid från fall till fall varvid den önskade fjädringen, materialet i skaftet och skaftdelens 3 dimen-



## SWEDEN

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One figure.

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[Title] Hockey stick

The present invention concerns a hockey stick or similar item consisting of a shaft, which in its lower end passes into a blade or the like, at which transition to the blade the shaft is relatively weakly dimensioned in order to allow some degree of shock-absorbing spring action when the stick is used. The aforementioned weak dimensioning of the shaft has the disadvantage that the club shafts often break. Through the present invention the aforementioned disadvantage is eliminated, and the hockey stick is characterized according to the invention by having a reinforcement device, which is intended to stiffen the shaft when the aforementioned part of the shaft has been deflected a small amount for the purpose of shock-absorbing spring action.

In a preferred embodiment of the invention, the reinforcement device consists of amide plastic or similar material, for which reason even the reinforcement device in some situations aids the shock-absorbing spring action of the shaft when the stick is being used. The shock-absorbing spring action of the club's shaft is not eliminated through the invention; on the contrary, the invention makes it possible to give the club shaft an increased amount of shock-absorbing spring action in this range, within which the reinforcement device does not become active. In tight situations the players can therefore now accomplish better shots than before.

The invention will be described in detail in connection with the attached drawing, which depicts one exemplary embodiment of a hockey stick chosen according to the invention. Figure 1 depicts the stick from the side, and Figure 2 depicts it from the back. Figure 3 depicts, on a different scale, a cross-section along the line III-III in Figure 1.

The hockey stick consists of the shaft 1 and the blade 2, the latter being attached at the bottom end of the shaft. As can be seen in Figure 2, the shaft has a decreasing width towards its bottom end.

The shaft 1 thus becomes relatively weakly dimensioned in the vicinity of the transition to the blade 2, and this is true even if the width decreases constantly as is customary with conventional hockey sticks. The aforementioned weakly dimensioned part of the shaft 1 is identified by the reference character 3.

The present invention provides the weakly dimensioned part 3, which is intended to allow some shock-absorbing spring action for the shaft 1 when the stick is used, with a reinforcement device 4, which is arranged such that it stiffens the shaft 1 when the part 3 has been deflected a small amount for the purpose of shock-absorbing spring action. Within certain limits, it is thus true that the shaft 1 maintains its entire shock-absorbing spring action.

According to the preferred embodiment, the reinforcement device 4 should consist of amide plastic or similar material, so that the reinforcement device 4 can aid the shock-absorbing spring action of the shaft 1 when the stick is used.

As is most clear from Figure 3, the invention has made it possible to make the part 3 weaker than has been the case in the prior art, for which reason the shock-absorbing spring action within that range in which the reinforcement device 4 does not become active has been increased. The weakening of the part 3 has been accomplished through the removal of concave regions 5 of material from the part 3.

As may be deduced from the above description, the stick allows two kinds of shock-absorbing spring action, where the first is entirely determined by the area 3 and the second entirely determined by the area 3 in combination with the reinforcement device 4. The former is used in tight situations, where less force is available for the shot, and the latter in other situations when truly hard shots are desired.

According to the embodiment shown in the drawing, the reinforcement device 4 consists of a case or the like attached on the shaft 1 over the relatively weakly dimensioned part 3, which case is, at its first end 6, firmly attached to the shaft 1 and which, at its other end 7, is located some distance from the shaft 1. The case 4 is arranged such that it is slipped over the shaft 1 before the blade 2 is glued or otherwise attached to the shaft 1.

According to the preferred embodiment, the case 4 should be shaped such that it comes into firm attachment to the shaft 1 at its upper end 6, whereas the lower end 7 is located some distance from the shaft 1. Accordingly, the case 4 can have a constant cross section as shown in Figure 3. The distance from the case end 7 to the shaft 1 is however determined from situation to situation, whereby the desired spring action, the material of the shaft, and the dimensioning of the shaft end 3 are the important determining parameters. Should the case 4 consist of amide plastic or some similar strong material, it should suffice to make it approximately 2 millimeters thick. At

least at the end 7 the case 4 should have a successively decreasing thickness such that a smooth transition between the shaft 1 and the case 4 is obtained.

The invention is not limited to that which is described above and which is shown in the drawing, but it can be changed within the limits of the following claims. It can also be used in field hockey sticks, bandy sticks, and the like.

**Patent claims:**

1. Ice hockey stick and the like consisting of a shaft (1), which at its lower end transitions to a blade (2) or the like, whereby the shaft (1) in the vicinity of the transition to the blade (2) is relatively weakly dimensioned to allow a certain degree of shock-absorbing spring action during the use of the stick, characterized by the attachment of a reinforcement device (4) to the relatively weakly dimensioned part (3) of the shaft (1), which device (4) is arranged to stiffen the shaft (1), when the aforementioned part of the shaft has been given a small amount of deflection for the purpose of shock-absorbing spring action.

2. Ice hockey stick according to claim 1, characterized in that the reinforcement device (4) consists of amide plastic or similar material, whereby the reinforcement device (4) in some applications also aids the shock absorbing spring action of the shaft (1) when the stick is used.

3. Ice hockey stick according to claim 1 or 2, characterized in that the reinforcement device (4) consists of a case or the like attached on the shaft (1) over the relatively weakly dimensioned part (3), which device (4) with its first end (6) is in firm attachment to the shaft (1) and which with its other end (7) is located some distance away from the shaft (1).

4. Ice hockey stick according to the claim 3, characterized in that its case (4) is in firm attachment to the shaft (1), while its lower end (7) is located some distance from the shaft (1).

**Prior Art Documents Cited**

United Kingdom 731,382.